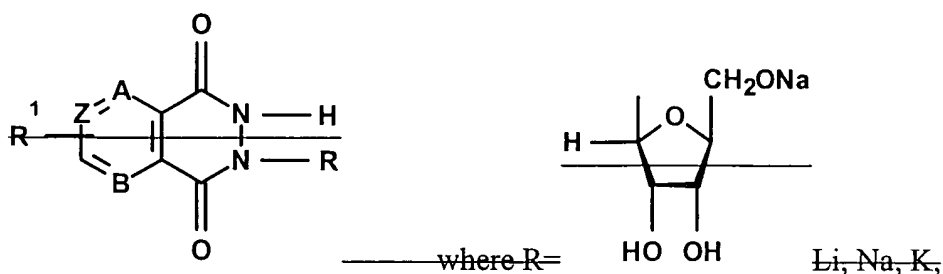


AMENDMENTS TO THE CLAIMS

Please **AMEND** the claims as follows:

1. (Currently Amended) ~~Use of cyclic bioisosteres of a purine system derivatives~~ A method of treating diseases caused by disorders of a nitreergic system and /or dopaminergic system of an organism comprising administering to an organism a compound having a general structural formula:



~~R⁺ = H, NH₂, Br, Cl, OH, COOH,~~

~~B = N=, CH=, Z = CH=, N=,~~

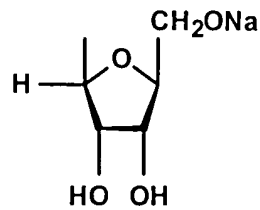
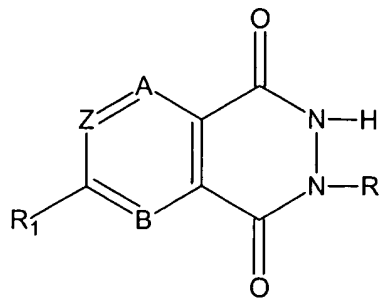
~~A = N= at B = N=, Z = CH=,~~

~~A = CH= at B = N=, Z = CH=,~~

~~A = CH= at B = N=, Z = N=,~~

~~A = CH= at B = CH=, Z = CH=,~~

~~A = CH= at B = CH=, Z = N=,~~



where R is selected from the group consisting of Li, Na, K, and

R¹ is selected from the group consisting of -H, -NH₂, -Br, -Cl, -OH, and -COOH;

B is selected from the group consisting of -N= and -CR¹=;

Z is selected from the group consisting of -N= and -CR¹=; and

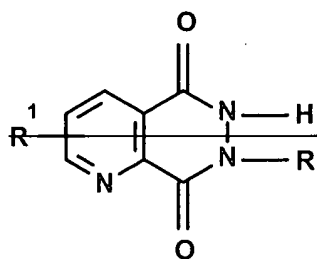
A is selected from the group consisting of -N= and -CR¹=,

with the proviso that when A is -N=, then B is -N= and Z is -CR¹=;

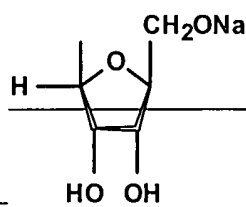
and pharmacologically acceptable salts thereof

~~and their pharmacologically acceptable salts~~ as active ingredients having activity with respect to nitroergic and dopaminergic systems in a pharmaceutically acceptable composition for treatment of diseases caused by disorders of a nitroergic system and /or dopaminergic system of an organism, wherein containing an the active ingredient is present in a pharmaceutically acceptable carrier in an amount sufficient for effecting said systems ~~in pharmacologically acceptable carrier.~~

2. (Currently Amended) ~~Use as claimed in claim 1,~~ The method according to claim 1, characterized in that wherein the active ingredient is a derivative of pyrido[2,3-d]-6H-pyridazine-5,8-dione, having a general formula:

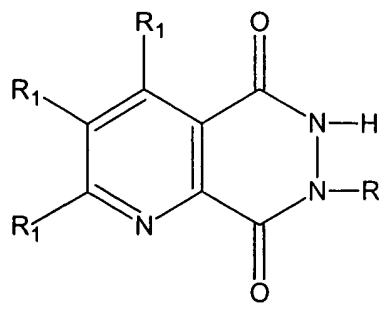


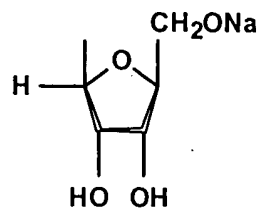
~~where R=~~



~~atom Li, Na, K,~~

~~R¹= H, NH₂, Br, OH, COOH.~~





where R is selected from the group consisting of Li, Na, K, and CH_2ONa ; and

R^1 is selected from the group consisting of -H, $-\text{NH}_2$, -Br, -OH, and $-\text{COOH}$.

3. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1, characterized in that wherein~~ the active ingredient is selected from the group ~~including~~ consisting of:

sodium salt of 7-(β -D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione (1),

sodium salt of 4-amino-7-(β -D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione (2),

sodium salt of 3-bromine-7-(β -D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione (3),

~~isodium~~ disodium salt of 4-hydroxy-7-(β -D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione (4),

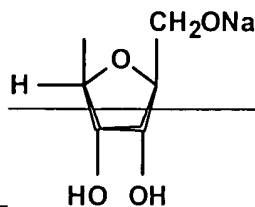
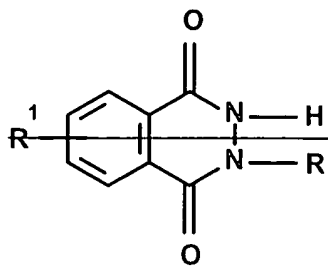
disodium salt of 3-carboxy-7-(β -D-ribofuranosile)pyrido[2,3-d]-6H-pyridazine-5,8-dione (5),

lithium salt of pyrido [2,3-d]-6H-pyridazine-5,8-dione (6),

sodium salt of pyrido [2,3-d]-6H-pyridazine-5,8-dione (7), and

potassium salt of pyrido [2,3-d]-6H-pyridazine-5,8-dione (8).

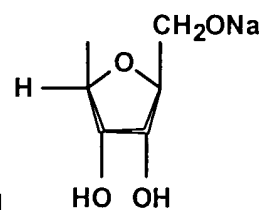
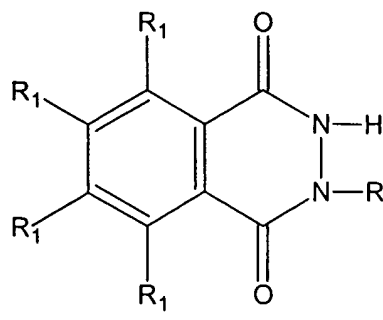
4. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1, characterized in that wherein~~ the active ingredient is a derivative of benzo[d]-3H- pyridazine-1,4-dione, having a general formula::



~~where R=~~

~~atom Li, Na, K,~~

$\text{R}^1 = \text{H}, \text{NH}_2, \text{Cl}, \text{OH}, \text{COOH}.$



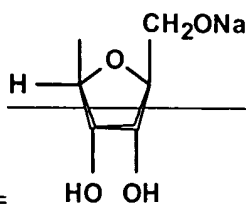
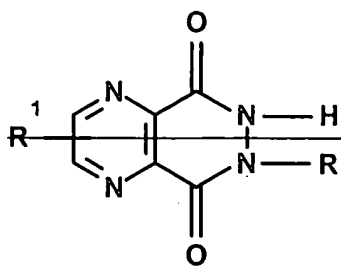
where R is selected from the group consisting of Li, Na, K, and HO OH ; and

R¹ is selected from the group consisting of -H, -NH₂, -Cl, -OH, and -COOH.

5. (Currently Amended) ~~Use as claimed in claim 1,~~ The method according to claim 1,
~~characterized in that wherein~~ the active ingredient is selected from the group ~~including~~ consisting
of:

sodium salt of 2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione (9),
sodium salt of 5-amino-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione (10),
sodium salt of 6-amino-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione (11),
sodium salt of 5-chlorine-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione (12),
disodium salt of 5-hydroxy-2-(β-D-ribofuranosile)benzo[d]-3H-pyridazine-1,4-dione (13),
lithium salt of 5-amino-benzo[d]-3H-pyridazine-1,4-dione (14),
sodium salt of 5-amino-benzo[d]-3H-pyridazine-1,4-dione (15),
potassium salt of 6-amino-benzo[d]-3H-pyridazine-1,4-dione (16),
disodium salt of 5-hydroxy-benzo[d]-3H-pyridazine-1,4-dione (17), and
disodium salt of 6-carboxy-benzo [d]-3H-pyridazine-1,4-dione (18).

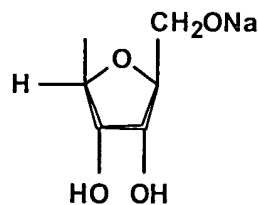
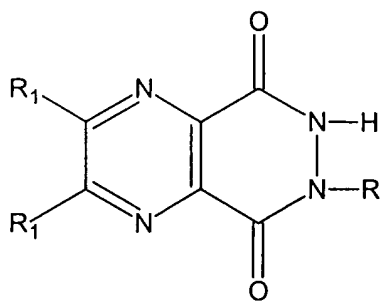
6. (Currently Amended) ~~Use as claimed in claim 1,~~ The method according to claim 1,
~~characterized in that wherein~~ the active ingredient is a derivative pyrazine[2,3-d]-6H-pyridazine-
5,8-dione, having a general formula: ÷

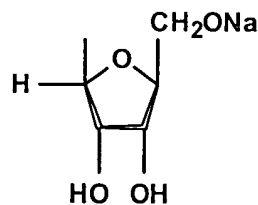


where R =

atom Li, Na, K,

$R^1 = \text{H}, \text{NH}_2, \text{Br}, \text{OH}, \text{COOH}.$



where R is selected from the group consisting of Li, Na, K, and ; and

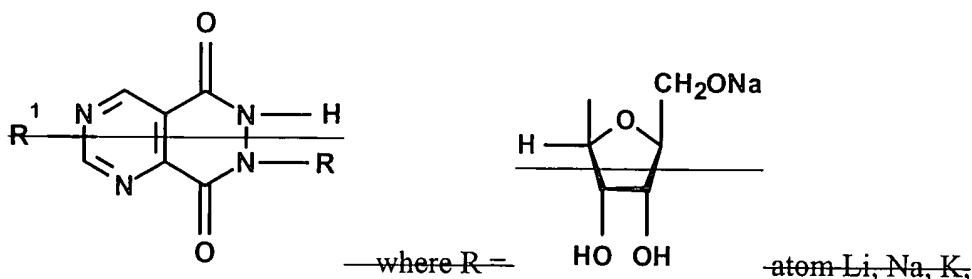
R^1 is selected from the group consisting of -H, -NH₂, -Br, -OH, and -COOH.

7. (Currently Amended) ~~Use as claimed in claim 1.~~ The method according to claim 1, characterized in that wherein the active ingredient is selected from the group including consisting of:

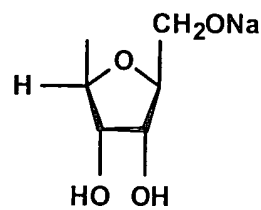
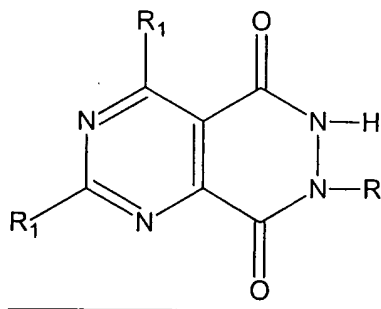
- sodium salt of 7-(β-D-ribofuranosile)pyrazino[2,3-d]-6H-pyridazine-5,8-dione (19),
- sodium salt of 2-amino-7-(β-D-ribofuranosile)pyrazino[2,3-d]-6H-pyridazine-5,8-dione (20),
- sodium salt of 3-amino-7-(β-D-ribofuranosile)pyrazino[2,3-d]-6H-pyridazine-5,8-dione (21),
- sodium salt of 3-bromine-7-(β-D-ribofuranosile)pyrazino[2,3-d]-6H-pyridazine-5,8-dione (22),
- disodium salt of 2-hydroxy-7-(β-D-ribofuranosile)pyrazino[2,3-d]-6H-pyridazine-5,8-dione (23),
- disodium salt of 2-carboxy-7-(β-D-ribofuranosile)pyrazino[2,3-d]-6H-pyridazine-5,8-dione (24),
- lithium salt of pyrazino[2,3-d]-6H-pyridazine-5,8-dione (25),
- lithium salt of pyrazino[2,3-d]-6H-pyridazine-5,8-dione (26),

potassium salt of 3-bromine-pyrazino[2,3-d]-6H-pyridazine-5,8-dione (27), and sodium salt of 2-amino-pyrazino[2,3-d]-6H-pyridazine-5,8-dione (28).

8. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1, characterized in that wherein~~ the active ingredient is a derivative of pyrimido[4,5-d]-6H-pyridazine-5,8-dione, having a general formula:



$R^1 = -H, -NH_2, -Br, -OH, -COOH.$



where R is selected from the group consisting of Li, Na, K, and ; and

R^1 is selected from the group consisting of -H, -NH₂, -Br, -OH, and -COOH.

9. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1, characterized in that wherein~~ the active ingredient is selected from the group including consisting of:

sodium salt of 7-(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione (29),

sodium salt of 2-amino-7-(β-D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione (30),

sodium salt of 4-amino-7-(β -D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione (31),
sodium salt of 2-bromine-7-(β -D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione (32),
sodium salt of 4-hydroxy-7-(β -D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione (33),
sodium salt of 4-carboxy-7-(β -D-ribofuranosile)pyrimido[4,5-d]-6H-pyridazine-5,8-dione (34),
lithium salt of pyrimido[4,5-d]-6H-pyridazine-5,8-dione (35),
sodium salt of 2-amino-pyrimido[4,5-d]-6H-pyridazine-5,8-dione (36), and
potassium salt of 4-bromine-pyrimido[4,5-d]-6H-pyridazine -5,8-dione (37).

10. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1,~~
~~characterized in that wherein~~ the active ingredient is used as a neuroprotector ~~in a pharmaceutical~~
~~composition~~ for protection of a the organism's nervous system.

11. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1,~~
~~characterized in that wherein~~ the active ingredient is used ~~in a pharmaceutical composition~~ for
improvement of a cognitive of function and normalization of psychophysiological status.

12. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1,~~
~~characterized in that wherein~~ the active ingredient is used ~~in a pharmaceutical composition of for~~
anxiolytic and antidepressive action.

13. (Currently Amended) ~~Use as claimed in claim 1, The method according to claim 1,~~
~~characterized in that wherein~~ the active ingredient is used ~~in a pharmaceutical composition in an~~
effective amount for treatment of the group consisting of mammals and human beings of one or
more diseases selected from the group ~~including~~ consisting of disorders caused by drug abuse,
~~such as~~ dependences on narcotics, alcohol and nicotine, insomnia, sexual disorders, ~~including~~
sexual dysfunction, gastro-intestinal disorders, psychoses, affective disorders, inorganic
psychoses, personality disorders, psychiatric disorders of mood, schizophrenia and
schizoaffective disorders, polydipsia, bipolar disorders, dysphoric mania, anxiety and associated
diseases, obesity, bacterial infections of the central nervous system ~~such as~~ meningitis, disorders
of learning, disorders of memory, Parkinson's disease, neurodegenerative diseases, ~~for example~~

Alzheimer's disease; depression, extrapyramidal side effects of neuroleptics, hypothalamic-pituitary effects, vascular and cardiovascular diseases, dystonia, dyskinesia, hyperkinesia, dementia, ischemia, motion disorders, hypertension, and diseases caused by a hyperactive immune system, such as allergies, and inflammations, ~~of mammals and human beings in an amount effective for treatment.~~